

## EAST Search History

Ref #	Hits	Search Query	DBs	Default Operator	Plurals	Time Stamp
S1	13078	(network with simulat\$4)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 10:59
S2	4667	(network with simulat\$4) (message or packet)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/07/21 14:48
S3	91	(network with simulat\$4) (message or packet) (call adj2 model)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/07/21 14:59
S4	86	(network with simulat\$4) (message) (call adj2 model)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/07/24 09:02
S5	2	"5812435".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/07/24 09:02
S6	779517	(telephone)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/14 11:04
S7	162745	(telephone with network)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/14 11:04
S8	1054	((telephone with network) same simulat\$3)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/14 11:05

## EAST Search History

S9	317	((telephone with network) same simulat\$3 same (message or packet))	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/14 11:05
S10	35	((telephone with network) same simulat\$3 same (message or packet)) (call adj2 model)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/14 11:05
S11	199	("4538259"   "4789983"   "4837858"   "5142534"   "5295154"   "5359598"   "5425051"   "5434858"   "5446736").PN. OR ("5726984").URPN.	US-PGPUB; USPAT; USOCR	OR	OFF	2006/09/14 14:28
S12	7274	370/351-357.ccls.	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/14 14:28
S13	7049	370/351-357.ccls. network	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/14 14:28
S14	219	370/351-357.ccls. (network with simulat\$4)	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/14 14:29
S15	212	370/351-357.ccls. (network with simulat\$4) (message or packet)	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/14 14:29
S16	24	370/351-357.ccls. (network with simulat\$4) (message or packet) (call adj2 model)	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/15 13:48
S17	2451	703/13-17.ccls.	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/15 13:48
S18	151	703/13-17.ccls. telecommunication	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/15 13:48
S19	120	703/13-17.ccls. telecommunication simulat\$3	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/15 13:48
S20	5	703/13-17.ccls. telecommunication simulat\$3 (call adj2 model)	US-PGPUB; USPAT; USOCR	AND	ON	2006/09/15 13:48

## EAST Search History

S21	2	"5726984".pn.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 16:14
S22	104715	"379"/\$.ccls.	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 16:14
S23	3750	"379"/\$.ccls. simulat\$4	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 16:16
S24	2672	"379"/\$.ccls. simulat\$4 network	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 16:16
S25	926	"379"/\$.ccls. (simulat\$4 same network)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 16:16
S26	127	"379"/\$.ccls. (simulat\$4 same network same message)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 16:17
S27	20	"379"/\$.ccls. (simulat\$4 same network same message same link)	US-PGPUB; USPAT; USOCR; EPO; JPO; DERWENT; IBM_TDB	AND	ON	2006/09/18 16:17

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**1 A parallel simulator for performance modelling of broadband telecommunication networks**

Richard W. Earnshaw, Alan Hind  
December 1992 **Proceedings of the 24th conference on Winter simulation**  
**Publisher:** ACM Press  
Full text available:  pdf(928.21 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

**2 Telecommunications: Experiences parallelizing a commercial network simulator**

Hao Wu, Richard M. Fujimoto, George Riley  
December 2001 **Proceedings of the 33nd conference on Winter simulation**  
**Publisher:** IEEE Computer Society  
Full text available:  pdf(240.20 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Most current approaches of parallel simulation focus on building new parallel simulation engines that require the development of new models and software. An alternate, emerging approach is to extend sequential simulators to execute on parallel computers. We describe a methodology for realizing parallel simulations in this manner. This work is specifically concerned with parallelization of commercial simulators where source code for some or all of the sequential simulator is not available. We des ...

**3 HNS: A streamlined hybrid network simulator**

Benjamin Melamed, Shuo Pan, Yorai Wardi  
July 2004 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, Volume 14 Issue 3  
**Publisher:** ACM Press  
Full text available:  pdf(865.29 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

This article was motivated by the need to speed up complex network simulation, especially in telecommunications settings, where high bandwidth translates into exorbitant numbers of packets that take inordinate CPU time to simulate. Since the simulation complexity of fluid workload is invariant under bandwidth scaling, flows of discrete units of workload may be replaced by (approximate) fluid streams for savings in CPU time and memory storage. To this end, the article outlines the design of a new ...

**Keywords:** Fluid-flow models, fluid TCP simulation, fluid-flow simulation, hybrid simulation, mixed models, packet models, streamlining

**4 A teletraffic simulator for circuit switched and signaling intelligent network with SS7**

Sophia Scoggins, Mark Scoggins, Jerrold Stach

December 1991 **Proceedings of the 23rd conference on Winter simulation****Publisher:** IEEE Computer SocietyFull text available:  pdf(771.06 KB) Additional Information: [full citation](#), [references](#), [index terms](#)**5 Approach to nation-wide network simulation making virtual reality for telecommunication network management**

Haruhisa Hasegawa, Akiya Inoue

December 1992 **Proceedings of the 24th conference on Winter simulation****Publisher:** ACM PressFull text available:  pdf(541.62 KB) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)**6 A SPIN-based model checker for telecommunication protocols**

Vivek K. Shanbhag, K. Gopinath

May 2001 **Proceedings of the 8th international SPIN workshop on Model checking of software****Publisher:** Springer-Verlag New York, Inc.Full text available:  pdf(167.49 KB) Additional Information: [full citation](#), [abstract](#), [references](#)

Telecommunication protocol standards have in the past and typically still use both an English description of the protocol (sometimes also followed with a behavioural and SDL model) and an ASN.1 specification of the data-model, thus likely making the specification incomplete. ASN.1 is an ITU/ISO data definition language which has been developed to describe abstractly the values protocol data units can assume; this is of considerable interest for model checking as subtyping in ASN.1 can be used ...

**7 Parallel shared-memory simulator performance for large ATM networks**

Brian Unger, Zhonge Xiao, John Cleary, Jya-Jang Tsai, Carey Williamson

October 2000 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**,

Volume 10 Issue 4

**Publisher:** ACM PressFull text available:  pdf(223.11 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#), [review](#)

A performance comparison between an optimistic and a conservative parallel simulation kernel is presented. Performance of the parallel kernels is also compared to a central-event-list sequential kernel. A spectrum of ATM network and traffic scenarios representative of those used by ATM networking researchers are used for the comparison. Experiments are conducted with a cell-level ATM network simulator and an 18-processor SGI PowerChallenge shared-memory multiprocessor. The resul ...

**Keywords:** ATM network modeling, conservative synchronization, optimistic synchronization, parallel discrete event simulation, time warp

**8 Modeling methodology: Parallel execution of a sequential network simulator**

Kevin G. Jones, Samir R. Das

December 2000 **Proceedings of the 32nd conference on Winter simulation****Publisher:** Society for Computer Simulation International

Full text available:  pdf(72.42 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Parallel discrete event simulation (PDES) techniques have not yet made a substantial impact on the network simulation community because of the need to recast the simulation models using a new set of tools. To address this problem, we present a case study in transparently parallelizing a widely used network simulator, called *ns*. The use of this parallel *ns* does not require the modeler to learn any new tools or complex PDES techniques. The paper describes our approach and design choi ...

9 **Tools: The Georgia Tech Network Simulator** 

 George F. Riley

August 2003 **Proceedings of the ACM SIGCOMM workshop on Models, methods and tools for reproducible network research**

Publisher: ACM Press

Full text available:  pdf(115.27 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We introduce a new network simulation environment, developed by our research group, called the *Georgia Tech Network Simulator (GTNetS)*. Our simulator is designed specifically to allow much larger-scale simulations than can easily be created by existing network simulation tools. The design of the simulator very closely matches the design of real network protocol stacks and hardware. Thus, anyone with a good understanding of networking in general can easily understand how the simulat ...

**Keywords:** Distributed Simulation, Large-Scale Simulations, Network Simulation

10 **SWiMNet: a scalable parallel simulation testbed for wireless and mobile networks** 

Azzedine Boukerche, Sajal K. Das, Alessandro Fabbri

September 2001 **Wireless Networks**, Volume 7 Issue 5

Publisher: Kluwer Academic Publishers

Full text available:  pdf(397.98 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

We present a framework, called SWiMNet, for parallel simulation of wireless and mobile PCS networks, which allows realistic and detailed modeling of mobility, call traffic, and PCS network deployment. SWiMNet is based upon event precomputation and a combination of optimistic and conservative synchronization mechanisms. Event precomputation is the result of model independence within the global PCS network. Low percentage of blocked calls typical for PCS networks is exploited in the channel alloca ...

**Keywords:** PCS network models, framework for PCS network simulation, parallel discrete event simulation, performance analysis

11 **Shade: a fast instruction-set simulator for execution profiling** 

 Bob Cmelik, David Keppel

May 1994 **ACM SIGMETRICS Performance Evaluation Review , Proceedings of the 1994 ACM SIGMETRICS conference on Measurement and modeling of computer systems SIGMETRICS '94**, Volume 22 Issue 1

Publisher: ACM Press

Full text available:  pdf(1.28 MB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

Tracing tools are used widely to help analyze, design, and tune both hardware and software systems. This paper describes a tool called Shade which combines efficient instruction-set simulation with a flexible, extensible trace generation capability. Efficiency is achieved by dynamically compiling and caching code to simulate and trace the

application program. The user may control the extent of tracing in a variety of ways; arbitrarily detailed application state information may be collected ...

**12 Performance Benchmark of a Parallel and Distributed Network Simulator**

Samson Lee, John Leaney, Tim O'Neill, Mark Hunter

June 2005 **Proceedings of the 19th Workshop on Principles of Advanced and Distributed Simulation PADS '05**

**Publisher:** IEEE Computer Society

Full text available:  pdf(121.79 KB) Additional Information: [full citation](#), [abstract](#), [index terms](#)

Simulation of large-scale networks requires enormous amounts of memory and processing time. One way of speeding up these simulations is to distribute the model over a number of connected workstations. However, this introduces inefficiencies caused by the need for synchronization and message passing between machines. In distributed network simulation, one of the factors affecting message passing overhead is the amount of cross-traffic between machines. We perform an independent benchmark of thePa ...

**13 Parallel execution for serial simulators**

David Nicol, Philip Heidelberger

July 1996 **ACM Transactions on Modeling and Computer Simulation (TOMACS)**, Volume 6 Issue 3

**Publisher:** ACM Press

Full text available:  pdf(450.56 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#), [index terms](#)

This article describes an approach to discrete event simulation modeling that appears to be effective for developing portable and efficient parallel execution of models of large distributed systems and communication networks. In this approach, the modeler develops submodels with an existing sequential simulation modeling tool, using the full expressive power of the tool. A set of modeling language extensions permits automatically synchronized communication between submodels; however, the aut ...

**Keywords:** parallel simulation, simulation tools

**14 Modeling methodology b: Network modeling and simulation: a scalable simulator for TinyOS applications**

Luiz Felipe Perrone, David M. Nicol

December 2002 **Proceedings of the 34th conference on Winter simulation: exploring new frontiers**

**Publisher:** Winter Simulation Conference

Full text available:  pdf(145.44 KB) Additional Information: [full citation](#), [abstract](#), [references](#), [citations](#)

Large clouds of tiny devices capable of computation, communication and sensing, goal of the Smart Dust project, will soon become a reality. Hardware miniaturization is shrinking devices and research in software is producing applications that allow devices to communicate and cooperate toward a common goal. Success on the software front hinges on the design of algorithms that can scale up with system size. Given that the number of individual cooperating devices will reach high orders of magnitu ...

**15 Supply chain simulation with LOGSIM-simulator**

Saku Hieta

December 1998 **Proceedings of the 30th conference on Winter simulation**

**Publisher:** IEEE Computer Society Press

Full text available:  pdf(39.93 KB) Additional Information: [full citation](#), [citations](#), [index terms](#)

16 Network Simulation 1: Performance of a mixed shared/distributed memory parallel network simulator



◆ Cameron Kiddie, Rob Simmonds, Brian Unger  
May 2004 **Proceedings of the eighteenth workshop on Parallel and distributed simulation**

Publisher: ACM Press

Full text available: [pdf\(154.92 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#)

Designing fast parallel discrete event simulation systems for shared-memory parallel computers is simplified by the efficient communication operations enabled by the common memory space. The difficulties involved in designing large shared-memory computers and the resulting high cost of even modest size systems has led to the proliferation of computer systems consisting of small shared-memory computers connected via low-latency message-passing interconnection networks. This paper describes how a n ...

**Keywords:** conservative parallel discrete event simulation, network simulation, scalable network simulation

17 A high fidelity ATM traffic and network simulator



◆ Brian W. Unger, Fabian Gomes, Xiao Zhonge, Pawel Gburzynski, Theodore Ono-Tesfaye, Srinivasan Ramaswamy, Carey Williamson, Alan Covington  
December 1995 **Proceedings of the 27th conference on Winter simulation**

Publisher: ACM Press

Full text available: [pdf\(889.74 KB\)](#) Additional Information: [full citation](#), [references](#), [citations](#), [index terms](#)

18 Special issue on specialized computer architecture simulators that see the present and may hold the future



◆ William (Bill) Yurcik  
March 2002 **Journal on Educational Resources in Computing (JERIC)**, Volume 2 Issue 1

Publisher: ACM Press

Full text available: [pdf\(37.27 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Welcome to this special issue of the *Journal of Educational Resources in Computing* (JERIC), which is focused on the topic of *specialized* computer architecture simulators, and is part of back-to-back JERIC issues describing the state-of-the-art in computer architecture simulators for educational purposes. JERIC is a unique forum, in that the simulation software corresponding to each of the articles in this issue is available for download and execution.

The guest ...

19 An overview of the University of Texas at Dallas' center for advanced telecommunications systems and services (CATSS)



◆ Imrich Chlamtac, Stefano Basagni, Stephen Gibbs  
April 2000 **ACM SIGMOBILE Mobile Computing and Communications Review**, Volume 4 Issue 2

Publisher: ACM Press

Full text available: [pdf\(816.71 KB\)](#) Additional Information: [full citation](#), [abstract](#), [index terms](#)

The University of Texas at Dallas' Center for Advanced Telecommunications Systems and Services (CATSS) was founded in January 1998 to satisfy the acute needs of the growing Dallas/Richardson telecommunications industry. Its mission is to foster a strong Industry-

University partnership to advance local telecommunications industries to the next generation of systems and products. Composed of UTD faculty and industry researchers and managers, the Center's focus is exclusively telecommunications-rel ...

20 [Analysis of wireless networks: tools and techniques: YAES: a modular simulator for mobile networks](#) 

Ladislau Bölöni, Damla Turgut

October 2005 **Proceedings of the 8th ACM international symposium on Modeling, analysis and simulation of wireless and mobile systems MSWiM '05**

Publisher: ACM Press

Full text available:  [pdf\(177.84 KB\)](#) Additional Information: [full citation](#), [abstract](#), [references](#), [index terms](#)

Developing network protocols for mobile wireless systems is a complex task, and most of the existing simulator frameworks are not well suited for experimental development. The YAES simulation framework was specifically developed such that it allows the fast prototyping of networking protocols, and support real-time experimentation and refactoring. By providing a large set of abstractions and generic implementations, a number of frequently used techniques such as genetic algorithms or neural netw ...

**Keywords:** mobile networks, simulation

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